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ABSTRACT

This newsletter is principally devoted to analyzing the policies and progress of environmental education within the Oceania Region and in Asia. Specifically treated are environmental education at the primary level, at the secondary level, and at the post-secondary level. Specific environmental education projects and programs are briefly described. Other brief articles treat resources and developments of interest in world-wide environmental education. (RE)

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UNESCO-UNEP ENVIRONMENTAL EDUCATION NEWSLETTER

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U.S. DEPARTMENT OF HEALTH, EDUCATION & WELFARE NATIONAL INSTITUTE OF EDUCATION

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TO THE EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)."

Environmental Education in the Asia and Oceania Region

In most countries of Asia, improvement of the quality of life through growth and development is a prime concern. Environmental degradation is caused mainly by underdevelopment and associated poverty. Evidence of this is found not only in unsanitary urban slums and hovels and impoverished rural habitats, but also in the growing numbers of unemployed and illiterates, in overexploited soils with dwindling agricultural productivity, in grasslands grazed to destruction, in the erosion of cultural identity, in degradated forests denuded of trees by excessive logging and in the dubious activities of international conglomerates exerting economic pressures on developing countries for exploitation of their natural resources.

Viewed against this background, general acceptance of environmental education in Asia may be ascribed to the emergence of two complementary concepts. On the one hand, education as a vehicle for transmission of societal values and knowledges must emphasize harmonious living with the environment. On the other hand, developmental aspirations of the society must also find their expression in national educational programmes. Acceptance of these complementary concepts as the basis of environmental education in Asia implies that environment is to be considered in its totality, including its natural, built, socio-economic and cultural aspects, while harmonious living with the environment is to be recognized not as a static maintenance of the status quo, but as a process of dynamic evolution in which development takes place in harmony with the environment.

Ideally environmental education programmes in the Asia and Oceania Region are to be evaluated in terms of their effectiveness in the implementation of these dual objectives. In practical terms, the main objectives of environmental education are to create awareness about the total environment as an integrated system, about interrelationships

and interactions between the component subsystems and about the alternatives available to individuals as well as to society when undertaking activites affecting the environment; to develop values and attitudes and provide motivation for protection and improvement of the total environment; and to help acquire skills necessary to undertake these environmentally related activities.

In most countries of Asia, environmental education is treated as a dimension of general education and its incorporation within the general curriculum is achieved by reorganizing and integrating the separate disciplines, and by emphasizing and enlarging their environmental contents. Generally, it has not been considered necessary to build additional infrastructures to implement environmental education programmes at the primary and secondary levels; the task has usually been carried out by existing curriculum development centres. However, the necessity of carrying out environmental surveys and research and the need to train the personnel required for implementation of environmental projects have led to the development of infrastructures devoted entirely to one or another aspect of environmental studies at the tertiary level.

Environmental Education at the Primary Level

Integrated approach in the primary curriculum

Until recently the science course which was offered to primary school children in Asia usually consisted of nature study in its most rudimentary descriptive form. Different parts of the curriculum were studies in isolation and little attempt was made to establish links between them. Student activities were almost always absent and a rigid syllabus with contents having no relevance to the pupils' immediate experience was attempted to be implemented through a highly formal "talk and chalk" method. Curriculum developers in most of the countries in Asia are now engaged in the task of replacing this type of conventional, inflexible and formal teaching by pupil-centred, activity-based integrated teaching. General education curricula now are usually centred around and spiral from the total environment of the pupil.

In the integrated general science curriculum developed for primary schools by the Curriculum Development Centre of **Sri Lanka,** for example, each turn of the spiral covers eleven themes: houses and the people who live in them, things we eat and drink, things we wear, things which help us work, how we live in mixed communities, the world around us, our school and its neighbourhood, the people who help us, how we travel and communicate, our earth and the sky above it, and things we see and hear. Although other parts of the total curricula (including language and mathematics) are not integrated with the science curriculum, the degree of integration incorporated in the latter is quite remarkable.

Most of the countries in the region have independently developed similar curricula, although in some, despite attempted integration, vestiges of single discipline study still persist. In **Indonesia,** for instance, general education curriculum is built around nine areas of study: religion, Pancasila moral education, language, mathematics, social sciences, natural sciences, sports and health, arts and special skills. Topics related to environmental education are treated mainly as subtopics in natural and social sciences. To overcome this dispersive approach, an experimental project has been launched in the municipal schools in Jakarta under the sponsorship of Unesco. The pilot project is based on research leading to the identification of those learning situations in primary schools which lend themselves most suitably for adoption of an integrated approach to environmental education. The project, after evaluation, is planned to be extended to all primary schools in Indonesia.

One of the most innovative programmes in pre-primary and lower primary environmental education (EE) was launched more than a decade ago in **Burma,** which is among the countries in Asia least affected by industrial pollution. The programme is firmly rooted in the conviction that children should develop from an early age a healthy, optimistic view of their environment, realizing that they are themselves part of nature and that education is relevant to their surroundings. In this "Patwinkyn" or "surroundings" programme, text books are dispensed with and children are encouraged to learn directly from their environments. In **Bangladesh** a similar programme, entitled "Muktangan Siksha" or "Open Air Education", was launched as a pilot project in 1976 and it is planned to extend the project shortly on a wider scale.

Teacher-training programmes for integrated environmental education at the primary level

In implementation of integrated EE programmes, teachers are required to play a role which is quite different from the traditional one. First of all, the curriculum is pupil-centred and it is necessary to re-train teachers so as to make them familiar with the new perspective. Activity-based programmes also call for initiative and innovative spirit on their part. Development of personal values being one of the primary goals of environmental education, teachers should not only be led to examine and develop their own values, they should also be trained in the methods leading to such developments in their students.

Largely due to resource constraints in most Asian countries, it is not possible to develop national in-service or pre-service teacher-training programmes incorporating all the above objectives. As it is, in many of the countries of the region even the number of conventionally trained primary teachers is insignificant compared to the numbers required. Fortunately, encouraging developments are taking place in the field of teacher education which are conducive of the growth of teacher-training programmes for environmental education. Institutionalization of decentralized resource centres and development of a variety of decentralized models for short-term and long-term teacher training in a number of countries in the region are of significance to environmental education as well. Another change which has been noticeable during the past several years is the increasing involvement of teachers in curricular and other developments in their fields. However, available teacher-training programmes related to EE are still both qualitatively and quantitatively inadequate.

The multiplying effect of teaching teacher-trainers has often been undertaken for effectively reaching large numbers of teachers in environmental education. Teachers' guidebooks, handbooks and modules for teacher education have also been produced in some countries of the region. The Patwinkyn programme of **Burma** has developed comprehensive guidebooks for teachers involved in programmes in which pupils do not use text books and lean heavily on the initiative and knowledge of their teachers. A similar handbook has also been produced in **Bangladesh.** Occasionally mass media have also been used when a programme is implemented in remote areas.

In Asia, cultural education is usually included at the primary level as a part of moral or religious education. For instance, in Burma, Indonesia, Japan, Korea, Philippines, Thailand and Singapore, moral education is a compulsory part of the primary curriculum. In Indonesia, Malaysia, Pakistan and several other countries in the region moral education has been integrated with religious education. In addition, social sciences incorporate the incidental teaching of moral values. It should also be noted that in many pre-primary and primary schools in Asia, music, dance, drama, etc., are included either in curricular or in extra-curricular activities. Again, students participate in these cultural activities as separate areas of study and the concept of the total environment as an integrated system, including the cultural environment, is not developed.

Environmental Education at the Secondary Level

Environment in science curricula

Areas lending themselves easily to incorporation of the environmental dimension are science courses at the higher secondary level, which are not professionally oriented, and integrated general science courses at the lower secondary level. In the design of integrated science curricula environment is often used as a core theme around which the entire course is developed. This is essentially the approach adopted by the Institute for the Promotion of Science and Technology (IPST) of **Thailand.**

The IPST integrated science curriculum interrelates change, energy and environment. Attention is also paid to the development of skills and of a scientific attitude in pupils who follow this triangular theme, integrating laboratory work with the theoretical contents of the course. Typically, curriculum writers personally experienced the problems of growing rice before the topic "Science from the Rice Paddy" was finally introduced into the curriculum.

Several techniques have been developed for introducing environmental education in nonprofessional courses at the higher secondary level. In **Singapore** it is compulsory for students in the arts to study one science subject. A popular choice is the relatively new subject "Human and Social Biology". Two important sections of the subject deal respectively with world population and individual and communal responsibility, emphasizing population aspects of environment and concerted community action for environmental sanitation and control. In **Malaysia** the "infusional" method has been used, for example, injecting population and environmental topics into such disciplines as home science, human biology, geography, etc.

A modular approach has been developed by IPST of **Thailand** for an interdisciplinary course at the higher secondary level. The modules are topic-centred and aim at providing competency and motivation for learners to deal with scientific aspects of problems of a developing society, to cope with the problems of their environment and to apply science in their daily life. Self-learning instructional modules on environmental topics are also the basis of the Unesco-sponsored EE project for primary school teachers in four regions of India.

Attempts are being made in **Indonesia** and **Malaysia,** among other countries in the region, to incorporate project type activities in formal school education. It is hoped that through this approach real-life situations will be explored to help teachers overcome psychological inhibitions resulting from their previous discipline-based education.

Professionally-oriented courses at the higher secondary level are always developed in terms of single disciplines. They are conceptually oriented and deliberately aimed at a high, intellectually stimulating level. Nevertheless attempts have been made to incorporate environmentally significant topics as well. In the IPST curriculum in biology, for example, the ecosystem, environmental balance and natural resource conservation are discussed in depth. Industrial chemistry and its impact on the environment are dealt with in the chemistry course. Similar attempts to orient curriculum towards environmental problems is almost universal in the Asian region.

Teacher-training programmes for secondary-school teachers

In several countries of Asia, teacher-training institutions for secondary school teachers have included environmental education as a component of the courses offered. In all teacher colleges in **Thailand,** for example, the curriculum includes two courses on ecology and on the conservation natural resources. Environmental education is an optional subject in the Bachelor of Education programme of the University of Agriculture of **Malaysia** and the University of Malaya, Kuala Lumpur, while for students in the School for Educational Studies of the Sains University of Malaysia, environment is a major area of study in the course on contemporary educational problems and issues.

In the four **Indonesian** national teacher-training institutes, environmental education is treated as a part of the population education courses. These courses are compulsory for students of both science and the humanities and include topics such as the impact of population growth on socio-economic development, land use, water management, the energy problem, conservation of natural resources, public health, nutrition, etc. Pedagogical aspects of population and environmental education are also included. Since the programme is interdisciplinary, a team-teaching approach has been adopted. In spite of many practical difficulties, this interdisciplinary teaching innovation has proved to be useful in many ways, not least of which is that it has led to a better appreciation of interrelationships among different components of the environment. A very good example of interdisciplinary team teaching is provided by the inter-faculty training programme organized for students in the Faculty of Education of the Chiangmai University of **Thailand,** who take courses related to environmental education in different faculties of the University, such as the faculties of science, agriculture, etc. In a Unesco-sponsored pilot project in the Philippines, the team-teaching technique was applied very successfully.

Environmental Education at the Post-Secondary Level

Environmental education programmes of some of the institutions of higher learning in Asia are not confined exclusively to the tertiary levels, but reach out to lower levels. Some of them participate in non-formal EE programmes as well. The Indonesian Institute of Science, for example, is deeply involved in Unesco-sponsored projects on formal and out-of-school environmental education of primary school children. The Institute of Environmental Research of the Chulalongkorn University of **Thailand** participates in popularization programmes organized by the National Environmental Board, the Environmental Conservation Club of Chiangmai, etc. A number of interesting environmental surveys has been carried out as a part of regular post-graduate research programmes in environmental education. These findings, when properly organized and adopted, will provide much needed resource materials for environmental studies at lower levels. For example, the Udayana University of **Indonesia** has conducted extensive research on the fresh water and marine biology of Bali, directly useful for school children of the area. The handbook on Sri Lankan flora and fauna, under preparation by the University of Colombo, is another example of this type of activity. Some of the students who pursue environmental studies at the higher level often take up teaching in schools as a profession. Thus universities with EE programmes quite often provide the highly trained personnel needed to improve teaching of environmental education in schools. Institutions of higher education often provide consultancy services to organizers of field work for school children, such as the Field Work Centre of **Sri Lanka.**

Pilot Project of the Mongolian People's Republic

The Mongolian People's Republic has recently completed a pilot project which involved out-of-school environmental education for the general public as well as specific social groups, specially industrial and agricultural workers. The project also included development of appropriate instructional aids and the establishment of eco-museums.

Specifically, six modules were developed for the environmental education of adult populations in rural and urban areas which dealt with: rare-plant protection; transport and environmental protection; the rational use of mineral resources; national customs and environmental education; medicinal plants and their usages; and land as the property of the nation. Five movie films and 18 sets of slides were produced as well as a "red book" on the plants and animals of Mongolia, their protection and conservation.

Similarly pictures and posters on the protection of air, water, forest, animals, birds and rare plants were prepared, published and distributed in a set of 960 items for a total of over 70,000 copies. Six hundred meetings and parel discussions were organized with an overall participaion of about 160,000 people. Eighty EE programmes were prepared for and broadcast by radio and television; 80 articles were specially written for and published by local and national revues and journals.

An eco-museum was established in each of seven departments of the Mongolian People's Republic.

MaB

MAB – Indonesia

A project for the nonformal environmental education of the young people of Jakarta is being conducted by a team of the Man and the Biosphere (MAB) Programme of Indonesia. Lectures and writing contests have been the means chosen, involving the development of audiovisual materials, such as slides illustrating the rational use of Indonesia's natural resources and a picture show designed for gatherings of 30 to 50 individuals. The slides are accompanied by a cassette which provides narration and music. The picture show accompanies lectures addressed primarily to housewives, since they, in turn, teach the young.

Schools, youth centres, women's gatherings and primary school teachers in Jakarta have been reached by the project, the latter by monthly lectures with an average of 60 teachers attending each lecture. To reach the young nationally, essay and poetry contests have been organized with specific themes for each year. Slogans have also been developed for use between national television shows. Two brochures have been produced and distributed which offer general information about the environment of Indonesia and its problems.

Plans for 1980 include continuation of the programme of lectures and writing contests, preparation of new materials on the natural, rural and urban environments, and development of more audiovisual materials, particularly EE slides and posters for school use.

Environmental Education in Senegal

Programmes and activities for the development of environmental education in Senegal may be said to have begun with the basic reorientation and restructuring of the country's educational system, 1971-72. The goal which was established involves promotion of an education linked directly to economic, social and cultural development and founded on the individual's acquiring a capacity to participate actively in the safeguarding and improving of his environment.

The beginnings of environmental education itself were first manifested in such studies as public health, the natural sciences, history and geography, and civic instruction. These studies are being continued, but increasingly the environmental dimension is being incorporated into other disciplines. In this sense, though the lycees and colleges remain largely traditional in their teaching approach, environmental education is making progress within their walls.

There are even more ambitious plans for about 80 per cent of the youth of Senegal, who do not go on to the lycee or college. This too is provided by the reorientation and restructuring laws of 1971-72, which provide a framework of "practical education" for this large group parallel to the "general education" and "technical education" programmes. Among the objectives of the "practical education" framework are the total integration of youth in their local region and development of their capacity to participate in its environmental improvement.

The education is both theoretical and practical and is based on interdisciplinarity. Pupils are constantly putting into practise, in their villages, what they are learning in school. Adult education is similarly conducted in tandem with the "practical education" programme for youth. Thus most of the population will eventually be covered either inside or outside the formal school system by this programme, which has an important component of environmental education.

Tbilisi Follow-Up in Poland

A number of environmental education activities have been undertaken by Poland as a follow-up to the Intergovernmental Conference on Environmental Education, held in Tbilisi, USSR, October 1977.

The complete text of the Tbilisi Declaration was published in scientific revues as well as a report on the conference. The latter also appeared in the Bulletin of the Polish National Commission for Unesco. A manual concerning the natural environment, its protection and management, aimed at teachers and students of all disciplines, was prepared and published in 1978.

In February 1979, a meeting on environmental education was organized by the Man and His Environment Committee of the Polish Academy of Science. The current state of environmental education in Poland was discussed and policies for the future were formulated. Working papers and proceedings of the meeting are currently being prepared for publication and distribution to the ministries, institutions and organizations most concerned.

A national teacher-training workshop in environmental education, supported by Unesco, is planned for June 1980. About sixty participants are expected, who will include administrators and teachers of the formal school system. Also foreseen for 1980 is passage of an environmental protection decree which will specify the roles and tasks of agencies in this field. Following upon that, a national centre for the coordination of environmental education activities will be established, in response to a Tbilisi recommendation to this effect (see also, page 6).

Other National Environmental Education Activities

Bangladesh

A one-week national seminar was held in Bangladesh earlier this year to discuss the role of the mass media in environmental education of the general public and, more specifically, to make recommendations for transmitting information about pollution and its prevention via the mass media to Bangladesh's 80 million people.

The seminar was sponsored by UNEP's regional office for Asia and the Pacific together with the Environment Pollution Control Board and Press Institute of Bangladesh. Participants recommended, among other things, the organization of a group of citizens to aid in the raising of public awareness of environmental problems and to help monitor and identify environmental hazards.

Colombia

"The First Working Meeting on Environmental Education" of Colombia was organized by INDERENA (Instituto Nacional de los Recursos Naturales y del Ambiente) in cooperation with the Ministry of Education and several ecological and university institutions. It was held in Bogota on 27 July 1979.

Participants met to discuss and make recommendations concerning: (1) the state of ecology and the environmental sciences and their requirements at the university level; (2) strategies for incorporating the environmental dimension into primary and secondary schools; (3) a methodological plan for the development and furthering of nonformal environmental education; (4) action programmes for raising environmental awareness in primary and secondary education and technical schools; and (5) promotion of research, experimentation, publication and teacher training in environmental education.

Immediately following the Bogota working meeting, "Environmental Education Day" was organized in Ubaque with a meeting devoted almost entirely to the Laguna of Ubaque, its study, preservation and protection.

India

A National Seminar on Higher Environmental Education, organized by the Indian Environmental Society, was held in New Delhi, 30-31 July 1979. Participants represented nearly 40 universities and several governmental agencies most concerned with education and the environment. Virtually all the disciplines were similarly covered.

The agenda included a status report on environmental education at the university level and sessions on, respectively, environmental education and the social sciences, the biological sciences, ecology and the professions. There was a session as well on employment possibilities for graduates in environmental education. A general consensus emerged on two viewpoints: (1) that the environment is indivisible: it has no geographical or ideological frontiers and is common to all living organisms, human, animal and plant; and (2) that there is no purely scientific or technological solution for environmental problems: the human or moral dimension is an essential component of such solutions.

In this connection, participants strongly recommended that environmental education be closely linked to relevant Gandhian thought and values. It further requested the chairman to appoint a panel, in consultation with the University Grants Commission, to develop an EE course along these lines and submit it to universities and other interested bodies for review and comment. Recommendations of the national seminar included the following:

- environmental education at the primary and secondary levels should develop environmental awareness and at the university level the knowledge and skills required to anticipate or solve environmental problems;
- interdisciplinary courses on the environment should be established for (1) professional groups, such as administrators, decision makers, teachers, doctors, engineers, planners and social scientists, and (2) those who are responsible for the preparation of environmental impact studies and reports, such as environmental planners and specialists;
- interdisciplinary research projects on environmental problems should be organized for the development of appropriate local materials for use in environmental education and training;

• environmental education learning materials should be produced and adapted to local needs;
• a data bank and ecosystems information base should be developed and centralized to support environmental education activities and resource utilization management.

United States

First of a possible series, the Urban Environmental Education National Short Course was conducted in Washington, D.C., 9-19 July 1979, under the sponsorship of the U.S. Department of Health, Education and Welfare and the Virginia Polytechnic Institute and State University.

"The course", in the words of its sponsors, "was modelled on the Unesco-sponsored pilot urban EE short courses which were held in London, March and September 1977, in cooperation with the Town and Country Planning Association" (see *Connect*, May 1978, p. 7). The success of the London project led to U.S. Government approval for the urban EE course held in Washington, D.C.

The purpose of the course was to examine the various aspects of a specifically urban environmental education. A variety of relevant themes were discussed by 40 participants and developed through lectures, discussions, workshops and audiovisual presentations as well as through a sequence of exploratory visits of the city of Washington and its surroundings. Lecturers were drawn from a body of experts in the fields of planning, architecture and education. They dealt with such topics as study of the urban environment; developing social and visual awareness; demand for public participation; the planner as public educator; new teaching techniques – environmental appraisal, urban trails, urban studies centres, etc.; preservation and restoration of old quarters; regional planning and new towns; the child as urban citizen; and the future of the urban habitat.

National EE Information Centres

The Tbilisi Intergovernmental Conference on Environmental Education (1977) recommended that Unesco's Member States should: "(1) identify as a matter of high priority, in cooperation with National Commissions for Unesco, an institution with extensive competence in the field of environmental education and to nominate it as a national information centre for the dissemination of information and experience at the national as well as at the regional and international levels; and (2) collect and circulate, in cooperation with the appropriate governmental and nongovernmental organizations, information relevant to environmental education, including information about rural and urban institutions and centres and key staff within their territories with special knowlege or experience, and information about available teaching and reference materials."

In response to this Tbilisi recommendation (No. 27), the Federal Republic of **Germany** has nominated the following as its national liaison office for environmental education: Umweltbundesamt (Federal Environmental Agency), Bismarckplatz 1, D – 1000 Berlin 33.

Unesco would welcome receiving information from others as to plans or developments in this direction. Please send names and addresses to *Connect*, address on last page. The information will be published as it is received; the complete list will be part of the second edition of the Unesco Directory of Institutions Active in the Field of Environmental Education.

Development and the Environment

An International Conference on the Environment was held in Arlon, **Belgium,** 23-29 September 1979. It was organized by the Fondation Universitaire Luxembourgeoise under the auspices of the Belgian National Committee for MAB and with the assistance of Unesco. More than 230 persons coming from 72 countries participated; they represented primarily those involved in development planning and management as well as environmental education.

The central theme of the conference was: "Methods and Strategies for Integrated Development". The work of the conference was organized, in turn, around six themes: (1) integrated development and the environment; (2) the interdisciplinary approach; (3) the planning process and strategy for integrated development; (4) aids to the decision-making process and the systems analysis applied to the process; (5) critical analysis of examples of integrated development and examination of their constraints, obstacles and limitations; and (6) environmental education and training of decision-makers, specialists and technicians.

There were no formal recommendations or conclusions at the end of the conference but a consensus of opinion emerged to the effect that:
• environmental education and training form the keystone for environmentally sound development and growth;
• recommendations of the Tbilisi Conference of 1977 provide the framework and guidelines of such education and training.

Participants approved a motion that a second conference on the same theme be organized and held in Quebec, Canada, in 1983; and that a network of organizations and individuals active in integrated development be developed.

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A regional seminar held in Bangkok, **Thailand,** 14-18 August 1979, and organized jointly by the UN Environment Programme (UNEP) and the UN Economic and Social Commission for Asia and the Pacific Region (ESCAP) was titled: "Environment and Development: Regional Seminar on Alternative Patterns of Development and Life-styles in Asia and the Pacific".

The purpose of the seminar was to provide a forum for development planners to examine the issues and prospects involved in designing environmentally prudent patterns of development which were at the same time socially and economically statisfactory. The agenda included: land and water management; energy alternatives; community development; industrialization in relation to rural-urban development; urbanization; methodological and institutional considerations; and environment and development in international perspective.

Although environmental education and training, especially of development planners and decision-makers, were not specifically discussed as they were at the international conference held in Arlon, Belgium (above), mention was made of the general regional scarcity of environmentally skilled personnel and the necessity of people's environmental education for any "sustained success" in environmental improvement at the community level. The Final Report of the regional seminar has just been published. For information, write: UNEP, P.O. Box 30552, Nairobi, Kenya.

Institutions and Programmes

The Free University of Brussells (Av. F.-D. Roosevelt, 50, B-1050 Brussells, **Belgium**) announces the establishment of a Study Centre on Environment in Treignes, devoted exclusively to rural areas, their conservation, preservation and "valorization". Printed and audiovisual materials, aimed at educating all sectors of the population in this regard, will be produced and disseminated. The Free University also offers two multidisciplinary programmes in environmental studies of two years duration each: one leads to a *licence spécial* in Environment; the other, which is under the auspices of the World Health Organization, leads to a *certificat international* in Human Ecology. The first year, students of both programmes jointly partake in 30 seminars which have teachers from within and without the university.

The Institute for Environmental Studies at the University of Toronto (Toronto, **Canada** M5S 1A4) is offering three Joint Environmental Studies Master's Programmes with, respectively, the Departments of Botany, Geography and Zoology at the university. Descriptive flyers of each of the three programmes are available. Full information about the Institute itself is contained in the last Annual Report, 1977-1978, which details its study and working groups, research projects and facilities, supporting institutions and staff.

The Seoul National University (Seoul, Republic of **Korea**) has a Graduate School of Environmental Studies with a Department of Urban and Regional Planning and a Department of Landscape Architecture, each leading to a master's degree. The university plans to open two new departments in the future: one concerning environmental engineering and management, the other urban design. A catalogue is available from the university.

The Department of Ecology and Environmental Research of the Swedish University of Agricultural Sciences (S-750 07 Uppsala, **Sweden**) has published a 110-page directory of research and educational organizations and departments entitled, *Biology, Ecology and Environmental Sciences in Sweden*. It is a revised edition in English of the directory first published in Swedish in 1977. The aim of the directory is "to provide the development assistance authorities with a list which will facilitate locating specialist competence within the natural and environmental sciences and to enable the establishment of contacts between organizations in developing countries and their counterparts in Sweden". The Swedish universities and research organizations listed are arranged by subject areas – botany, zoology, genetics, limnology, environmental protection, etc.

The Council for Environmental Education at the School of Education, University of Reading (London Road, Reading RG1 5AQ, **U.K.**) has available, as a report, replies to a questionnaire on the provision of field-work leadership courses by schools, colleges and institutes of higher education of Britain. The report includes comments on the replies by the Council's Working Party. The Council has also published a new 194-page edition of the Directory of Environmental Literature and Teaching Aids (DELTA). It contains details of books, films, filmstrips, magazines, etc., and is divided into topic areas for easy reference, forming a comprehensive list of resources usable in teaching about the environment.

Two recent publications are now available from the Department of Education and Science (Elizabeth House, York Road, London SE1 7PH, **U.K.**): *The Environment: Sources of Information for Teachers*, 132 pages, which contains a list of organizations providing environmental information, preceded by an introductory essay on environmental education; and *Curriculum 11-16: Supplementary Working Papers by HM Inspectorate*, a 14-page folio-size brochure, which concerns, in part, environmental education in the secondary school curriculum.

From *Environmental Education Report* (Washington, D.C.), May 1979: An activity-oriented energy education curriculum for grades K-12 is being developed by the state of Indiana. The curriculum materials emphasize a change in students' habits of energy use and include conservation measures that students can use daily. The materials also encourage student participation in energy conservation in the school, home and community. Materials for grades K-6 (primary level) have now been developed. Junior high school materials will be available in 1980, and high school materials (secondary level) by 1981. The curriculum components can be used in social studies and science courses. Published materials are mailed free of charge to teachers. For more information, write: Kathy Lane, Division of Curriculum, Indiana Department of Public Instruction, 229 State House, Indianapolis, Indiana 46204, **U.S.**

EE News and Communications

The **Government of Cuba** has announced the creation of a commission within the Ministry of Education as a follow-up to the country's first national training workshop in environmental education, which was held in Havana, 28-30 March 1979 (see *Connect*, September 1979). The commission is charged with developing, coordinating and supervising the activities to be undertaken by the ministry in pursuance of the recommendations of the workshop. The commission is also to report periodically on the materials developed and the results of other EE activities.

An informal conference for local managers and staff of Europe's inhabited heritage landscapes will be held in England, 7-11 April 1980. It is titled: "Land Management and Conservation in European Naturparke, Parcs Naturels, National Parks (U.K.) and Equivalent Reserves". Its aim will be to exchange information and to discuss how to resolve conflicts of land use in these areas. For more information, write: Peter Townsend, Principal, Peak National Park Study Centre, Losehill Hall, Castleton, Derbyshire, S30 2WB, **U.K.**

ICASE (International Council of Associations for Science Education) has announced, well in advance, a regional seminar titled "Energy and Environment Education in Europe", which is to be held in Monte Carlo, **Monaco**, 26-31 March 1981. It is anticipated that about 100 persons will be invited, principally among science teachers of European schools and those reponsible for teacher education in the region's colleges and universities. It is hoped also to interest policy makers in Ministries of Education, Environment, Energy and Science. Theme 1 of the seminar will be: Energy and Science Education. Theme 2 will be: Environment and Science Education. For more information, write: ICASE c/o The British Council, 10 Spring Gardens, London SW1A 2BW, **U.K.**

Also available from ICASE is a 122-page booklet concerning its International Conference on Integrated Science Education, held in Nijmegen, Netherlands, 28 March-7 April 1978 (see *Connect*, September 1978). The booklet contains the plenary lectures, including that titled, "The Environment as an Integrating Factor in Science Education", as well as reports of 10 working groups and an evaluation of the conference itself.

The **Environment Liaison Centre,** P.O. Box 72461, Nairobi, Kenya, has published its *Report on Non-Government Activities on Environmental Issues Related to UNEP Programmes* in three languages (English, French and Spanish). The report was prepared for the Seventh Governing Council of the United Nations Environment Programme (UNEP) and covers these subject areas: environment and development, including eco-development; human settlements; use of natural resources; environmentally sound and appropriate technology ; industry and environment; energy; and natural disasters. An appendix contains a list of 517 non-government organizations throughout the world involved in environmentally concerned activities.

The 1978-79 annual report of the **IUCN** (International Union for Conservation of Nature and Natural Resources, 1110 Morges, Switzerland) is contained in a special issue of the organization's *Bulletin*, dated July 1979. Included in the same issue is a summary report of the IUCN Commission on Education, "which", in its own words, "aims to promote an understanding of both ecology and conservation objectives (including awareness of relationships among people, their cultures and the biosphere), to provide people with the skills required to achieve those objectives and to ensure the incorporation of an environmental education component into all parts of IUCN's programme".

The 1978-79 Yearbook of the **World Wildlife Fund** (1110 Morges, Switzerland) is now available. Activities for the period are listed and described in terms of specific projects, which are arranged by region and country and indexed by species. The organization is working closely with UNEP and IUCN on a "world conservation strategy".

The Centre for Human Environments (33 West 42 Street, New York, N.Y. 10036, **U.S.**) is involved in coordinating a U.S. project for International Year of the Child, which will deal with documenting children's direct participation in the planning, design and management of their surroundings. The project involves production of a large poster and an inexpensive casebook publication. "These materials will be directed toward those professionals in city, state and federal government agencies whose decisions influence the environments inhabited by children and youth. They will illustrate how young people can be directly involved in environmental change through examples of their participation within the decision-making context of the whole community." Case studies and examples of such direct participation on the part of children and youth are urgently solicited. They are to be sent to the organization and address indicated above.

Venezuela's Sociedad Conservacionista del Estado Sucre (Conservation Society of the State of Sucre) has just celebrated the fourth anniversary of its establishment. Statutes and other materials of the society are available on request. Address: Quinta "Tunapuy", Primera Transversal de la Avenida "Andrés Bello", Sector "F", Parcelamiento Miranda, Cumana, Venezuela.

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